

Appl. No. 09/982,544
Amtd. date September 8, 2005

PATENT

REMARKS/ARGUMENTS

Claims 1, 32, and 44 have been canceled in favor of focusing on the methods of claims 29, 36, and 37. Accordingly, dependent claims 18 (comparable to pending claim 30), 24 (comparable to claim 31), 33-35 and 38 have been canceled as well. The claim cancellations were made to expedite acceptance of the instant application and not in acquiescence of any rejection of record. The revised claims are better tailored to current business considerations.

The features of claims 1 and 44 are now in claims 29, 36 and 37. Claim 21 has been canceled in favor of inclusion of the feature therein in claims 29, 36 and 37.

New claims 45-52 have been introduced. They correspond to, and are supported by, previously presented claims as follows.

New claim	Previously presented claim
45	30
46	31
47	19
48	20
49	22
50	23
51	26
52	27
53	28

No new matter has been presented, and entry of the above amendment to the claims is respectfully requested.

Telephonic Interview of September 7, 2005

Applicants thank Examiner M. Haghighatian and SPE S. Padmanabhan for the courtesy of a telephonic interview with Poongunran Muthukumaran and the undersigned on

Appl. No. 09/982,544
Amdt. date September 8, 2005

PATENT

September 7, 2005. The interview began with a brief description of Applicants' interpretation of the claims and the nature of the invention as relating to the alveolar portion of the lungs rather than the upper portions of the lungs such as the bronchi and bronchioles.

The discussion then turned to the product claims and the Berg et al. reference applied against them. Applicants' representatives learned that the Examiners interpret the "wherein said particles have a density and particle size to permit them to reach the alveoli of a human subject's lungs upon inhalation" from claim 1 as an "intended use" limitation rather than an actual limitation of the particles and powder of the claim. Applicants' representatives voiced their disagreement with this view and pointed out that the language, while describing a feature in functional claims, was nevertheless a description of a feature rather than an intended use. Applicants' representatives also described the view that Berg et al. reference did not anticipate the claims and contained language that too broad and vague to adequately anticipate or render obvious the claimed invention.

The interview also included a discussion of the method claims, where the Examiners acknowledged the limitations of the Berg et al. disclosure. They indicated that claim 29 may be allowable if the focus on alveolar delivery was more express than by the language in claim 1, from which the method claims depended. SPE Padmanabhan suggested that inclusion of features from claims 20-22 might also be helpful, but he said that he and Examiner Haghighatian would reserve consideration of the method claims until they were presented in a written response. In response to an inquiry regarding whether recitation of "alveolar delivery" or similar language in the method claims would be viewed as raising new issues for search or consideration, Examiner Haghighatian agreed to SPE Padmanabhan's suggestion that if a significant new search would be needed, then an Advisory Action would issue to that effect. But if no such search burden is needed, then the language would be entered and allowability of the claims considered.

The interview further included a discussion of the inadequacies of the combination of Berg et al. and the secondary references by Manning et al. and Rouanet et al. by Applicants' representatives. The Examiners indicated that those references would not be applicable to the method claims.

Appl. No. 09/982,544
Amtd. date September 8, 2005

PATENT

Rejections under 35 U.S.C. § 103(a)

Claims 1, 17-19, 22-25, 29-30, and were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by, or alternatively under 35 U.S.C. § 103(a) as allegedly unpatentable over, Berg et al. (WO 95/01135). As an initial matter, all previous Applicant arguments traversing the application of Berg et al. are hereby incorporated by reference as if fully set forth. Simply put, Applicants believe that this rejection is based on an inaccurate interpretation of a feature of claims 1 and 44 as being "an intended use". Moreover, Applicants believe that the rejection is particularly misplaced with respect to claim 22 because the alleged Berg et al. disclosure of particle size is with respect to contrast agents rather than with regard to drug delivery. There is no teaching or suggestion of the particular particle size range recited in claim 22, and no adequate motivation provided for why the artisan of ordinary skill would make and use such particle sizes in the absence of impermissible hindsight reconstruction.

However, and as described above with respect to the telephonic interview, Applicants are of the belief that this rejection has been obviated based on the above revisions to the claims.

More specifically, the claims are now directed to methods comprising delivery, *to the alveoli of a subject*, of a therapeutic agent via the aerogel containing product of previous claim 1. The aerogel containing product is also defined in terms of the density of the aerogel particles as previous recited in claim 21.

As explained during the telephonic interview, Berg et al. fails to describe any subject matter related to alveolar delivery. For example, no use of the terms "lung" or "alveoli" or "inhale" or "inhalation" or derivatives of these terms are used in the Berg et al. disclosure. There is also no reference to the terms "bronchi" or "bronchiole" or derivatives thereof aside from a single reference to "bronchography" on page 13, lines 13-15. But even that reference is limited to the use of aerogels as contrast agents rather than in drug delivery. Therefore, there is no teaching, suggestion, or other indication by Berg et al. of delivery of an aerogel material into the alveoli of a subject's lungs.

Appl. No. 09/982,544
Arndt. date September 8, 2005

PATENT

Moreover, Berg et al. fail to teach, suggest, or otherwise indicate particles with a density range as recited in the pending claims. There is simply no anticipation of the claims by Berg et al. and no basis to motivate an artisan of ordinary skill to modify the Berg et al. disclosure to arrive at the claimed methods.

Furthermore, and to the extent that this rejection may continue to be based upon the allegation of Berg et al. as teaching particles of less than 5 microns, Applicants again point out that the only basis for this is on page 11, lines 29-35, which is directed to aerogels as contrast agents rather than in drug delivery. Such a disclosure is insufficient for anticipation of subject matter like that in pending claim 22 (see MPEP 2131.03II and the cases cited therein) and provides no basis for the modification of Berg et al. to arrive at the claimed invention absent impermissible hindsight reconstruction.

In light of the above and Applicants' previous arguments, Applicants respectfully submit that no *prima facie* case of anticipation or obviousness of the pending claims is present and this rejection may be properly withdrawn.

Claims 1, 17-18, and 22-44 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Berg et al. (as cited above) in light of Manning et al. (USP 5,981,474). Applicants again reassert their previously presented arguments against the instant rejection as if they were fully set forth. For example, where is the teaching or suggestion in either of Berg et al. or Manning et al. of a) "co-gelling" as in claim 31; b) therapeutic agent as the aerogel particle material as in claim 40; or c) a controlled or slow release formulation as in claims 42 and 43? Additionally, where is the motivation for an artisan of ordinary skill to combine teachings from the aerogel art (as in Berg et al.) and the "hydrophobic ion pair complex with an amphiphilic material" art (as in Manning et al.)? Where is the expectation of success that the teachings from these different areas can be successfully combined?

However, and as described above with respect to the telephonic interview, Applicants are of the belief that this rejection has been obviated based on the above revisions to the claims. This is in part due to the inadequacies of Berg et al., as explained above, with respect to the pending claims. Manning et al. do nothing to correct those inadequacies.

Appl. No. 09/982,544
Amdt. date September 8, 2005

PATENT

Therefore, Applicants respectfully submit that the combination of the two references is misplaced because no *prima facie* case of obviousness is present. Accordingly, Applicants respectfully submit that this rejection may be properly withdrawn.

Claims 20-21 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over Berg et al. (as cited above) in light of Rouanet et al. (USP 5,864,923). Applicants again reassert their previously presented arguments against the instant rejection as if they were fully set forth. For example, Berg et al. do not teach particles with the density and size that permits them to reach alveoli. This is not rectified by Rouanet et al., who also do not provide any disclosure relative to delivery of particles to alveoli.

However, and as described above with respect to the telephonic interview, Applicants are of the belief that this rejection has been obviated based on the above revisions to the claims. This is in part due to the inadequacies of Berg et al., as explained above, with respect to the pending claims. Rouanet et al. do nothing to correct those inadequacies.

Moreover, Applicants respectfully point out that the disclosure of Rouanet is with respect to anti-perspirants and deodorants (see for example the abstract) for *topical application to the skin*. Thus its discussion of particle density (see column 3, lines 58-65) and other aerogel properties are limited to such compositions for *topical application*. As raised during the interview, where is the motivation to combine the Berg et al. teachings of *in vivo* contrast agent and drug delivery with the Rouanet et al. teachings of *topical* formulations as anti-perspirants and deodorants? Why would the artisan of ordinary skill believe that the aerogel properties of *topical formulations* disclosed by Rouanet et al. can be successfully used in the *in vivo* contrast agent and drug delivery contexts of Berg et al? As would be known to the skilled person, the environment of the skin's exterior is very different from the internal environment where Berg et al.'s compositions are to be used. Therefore, where is the expectation of success in using aerogel particles with the properties of Rouanet et al. in the contexts of Berg et al.? None of these points are adequately addressed to provide the basis for a *prima facie* case of obviousness.

Appl. No. 09/982,544
Amtd. date September 8, 2005

PATENT

Therefore, Applicants respectfully submit that the combination of the two references is misplaced because no *prima facie* case of obviousness is present. Accordingly, Applicants respectfully submit that this rejection may be properly withdrawn.

Conclusion

Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is urged.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 858-350-6151.

Respectfully submitted,



Kawai Lau, Ph.D.
Reg. No. 44,461

TOWNSEND and TOWNSEND and CREW LLP
Two Embarcadero Center, Eighth Floor
San Francisco, California 94111-3834
Tel: 858-350-6100
Fax: 415-576-0300
60581206 v1